

- Olendorff, R. R. 1975. Population status of large raptors in northeastern Colorado—1970–1972. *Raptor Res. Rep.* 3:185–205.
- Porter, R. D., and S. N. Wiemeyer. 1972. Reproductive patterns in captive American Kestrels (Sparrow Hawks). *Condor* 74:46–53.
- Slater, W. L. 1912. *A history of the birds of Colorado*. Witherby and Co., London.
- Sharp, C. S. 1902. Nesting Swainson Hawk. *Condor* 4:116–118.
- Simpson, R. B. 1909. American Goshawk nesting in Pennsylvania. *Oologist* 26:85–87.
- Slevin, J. R. 1929. A contribution to our knowledge of the nesting habits of the Golden Eagle. *Proc. California Acad. Sci.* 18:45–71.
- Thomas, G. B. 1908. The Mexican Black Hawk. *Condor* 10:116–118.
- Tyler, J. G. 1923. Observations on the habits of the Prairie Falcon. *Condor* 25:90–97.
- Tyrrell, W. B. 1936. The Ospreys of Smith's Point, Virginia. *Auk* 53:261–268.
- Wade, J. M. 1882. Sharp-shinned Hawk. *Ornithol. and Ool.* 6:89–91.
- Walton, B. J. 1977. Development of techniques for raptor management, with emphasis on the Peregrine Falcon. *California Dept. Fish and Game Admin. Rep.*, no. 77-4.
- Wolfe, R. 1912. The western Horned Owl in western Kansas. *Oologist* 29:222–224.

## PROBABLE PREDATION ON WHITE-TAILED KITE BY RED-TAILED HAWK

by

D. Randall Pinkston

Department of Biological Sciences

Box 5640, Northern Arizona University

Flagstaff, Arizona 86011

and

Jerry G. Caraviotis

8850 Chimney Rock Rd., Apt. 92

Houston, Texas 77096

Though Red-tailed Hawks (*Buteo jamaicensis*) may prey upon a variety of both vertebrate and invertebrate animals (Sherrod 1978), reports of their predation on raptors are apparently rare. Drawing from a handful of observations, classical summaries of the Red-tailed Hawk's diet include Red-tailed Hawk, Red-shouldered Hawk (*Buteo lineatus*), and Screech Owl (*Otus asio*) as known prey (Bent 1937; Fitch et. al. 1946). More recently, cannibalism involving adult Red-tailed Hawks was reported by Clevenger and Roest (1974).

On 2 January 1978, the freshly killed carcass of a White-tailed Kite (*Elanus leucurus*) was found on the ground at the entrance of Armand Bayou Nature Center in southeast Harris County, Texas, in a spot from which a large Red-tailed Hawk had flown only moments before. The head had been completely removed and apparently eaten; only the lower mandible and a single quadrate bone remained. The furcular area had been cleared of tissue through the breast muscles to the sternum. Many dorsal feathers had been removed and lay scattered around the carcass. The otherwise intact carcass was salvaged and placed in the Texas Cooperative Wildlife Collections at Texas A&M University, College Station (TCWC, No. 10418). The kite was an adult female.

We did not see the actual kill but assume that it was predation and not scavenging for the following reasons. First of all, it seems unlikely that the hawk discovered a kite

wounded by gunshot because the carcass was well within the boundaries of the nature center where firearms are prohibited. In addition, no evidence of gunshot wounds was discovered in the examination of the carcass. Secondly, internal examination revealed that the vertebral column, as well as several vertebral ribs on the left side, had been broken in the thoracic region. Such damage probably resulted from a single impact of great force from above, as by a hawk in a dive. It seems improbable that such localized heavy damage would have resulted had the kite been wounded and the encounter taken place on the ground. An alternate explanation, that the hawk was scavenging on a road-killed kite, is not feasible because the prey bird was discovered freshly killed across a drainage ditch and up a steep embankment from the nearest road.

#### *Literature Cited*

- Bent, A. C. 1937. Life histories of North American birds of prey. Part 1. *U.S. Nat. Mus. Bull.*, no. 167.
- Clevenger, G. A., and A. I. Roest. 1974. Cannibalism in Red-tailed Hawk. *Auk* 91(3): 639.
- Fitch, H. S., F. Swenson, and D. F. Tillotson. 1946. Behavior and food habits of the Red-tailed Hawk. *Condor* 48(5):205-237.
- Sherrod, S. K. 1978. Diets of North American falconiformes. *Raptor Research* 12(3/4):49-121.

## **GOLDEN EAGLES SUCCESSFULLY BREEDING IN SUBADULT PLUMAGE**

by

Sherry Teresa\*

Department of Zoology  
Brigham Young University  
Provo, Utah 84602

In 1979 I observed a pair of breeding Golden Eagle (*Aquila chrysaetos*), in Carbon County, Wyoming, in which one bird was in subadult plumage. This pair successfully raised and fledged two young. I observed and photographed these birds periodically for seven weeks. The fact that eagles were breeding in subadult plumage is significant in that most eagles do so only under conditions which are unusually favorable or unfavorable (e.g., during heavy persecution). Other species of raptors breed at ages younger than usual when conditions are exceptionally good, either in extremely favorable years or areas; or when there are fewer than usual adults in a population leaving territories vacant (Newton 1979). In the Prairie Falcon (*Falco mexicanus*) it was observed that 9 percent of a population bred in subadult plumage (all female), and 8 out of 10 successfully fledged at least one offspring (Platt 1979 and pers. comm.).

In the European Sparrowhawk (*Accipiter nisus*), Goshawk (*Accipiter gentilis*), and Kestrel (*Falco tinnunculus*), the percentage of females breeding in subadult plumage was directly correlated with prey abundance and scarcity (Newton 1979, McGowen 1975, and Village 1979). Both sexes in pairs of Golden Eagles have been observed in immature plumage, and young have been raised in some instances (Sandman 1957, Bates 1976). In Scotland Golden Eagles, when both birds were in subadult plumage, have

\*Present address: 5741 N. Primrose Ave., Temple City, CA 91780.